Correction

$(1-\alpha) \cdot 100\%$ CI

$\text{stat} \pm z_{1-\frac{\alpha}{2}} \cdot SE$

holds for either known SD of box or "fairly large" # of draws, ≥ 100 for sure fire

Hypothesis Testing

Null hypothesis:

H_0, typically we make this restrictive

so possible to easily derive results "under" the null.

Alt hypothesis

H_1 or H_A, generally complement of H_0.

$H_0: \mu = 0$

$H_1: \mu \neq 0$

Rules of hypoth testing

Reductio ad absurdum

1. Assume null

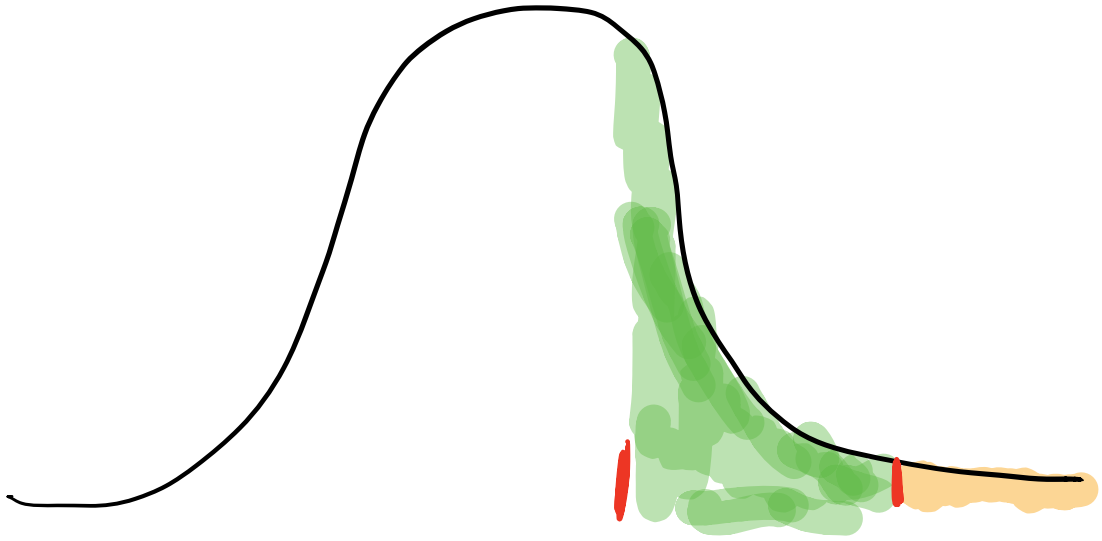
2. Find something about data under null (compute statistic)

3. See if this statistic would "realistically" be generated under null (p-value)

4. If it is fail to reject null

   If it is not reject null

P-value is the probability of seeing an as extreme or more extreme result given the null hypothesis



There is a duality between confidence interval and hypothesis testing.

$(1-\alpha) \cdot 100\%$ CI

If we use p-value (two-sided) cutoff of α (typically 0.05)

then under certain regularity conditions

p-value $< \alpha$

if and only if

the statistic falls outside of $(1-\alpha)$ confidence interval.